

In re MARK A. ROSS, Application No. 09/910,277
Amendment A

REMARKS

The Office action dated January 31, 2005, and the references cited have been fully considered. In response, please enter the amendments presented herein and consider the following remarks. Reconsideration and/or further prosecution of the application is respectfully requested. No new matter is added herein.

Applicant appreciates the Office's consideration of the submitted references and the return of the 1449's indicating such consideration of all of these references.

Applicant would like to bring to the Office's attention two pending US applications: 09/196,763 and 09/197,929, which were both filed on July 16, 2002, and which published on January 22, 2004, as US 2004/0015752 and US 2004/0015753, respectively. Applicant has also filed an Information Disclosure Statement via facsimile on May 2, 2005, (the same day that this response is being submitted via facsimile), citing these references and pending applications.

Applicant appreciates the Office's statement that Applicant never received the Office action submitted November 1, 2004. As the Office informed Applicant's representative, the Office never initially mailed the Office action (and thus, it is impossible for Applicant to have received that Office action). It was Applicant's representative that discovered the November 1, 2004, submitted Office action was in the USPTO's image file wrapper of the present application, and informed the Office that it had not been entered in PAIR, nor otherwise indicated as being mailed by the Office, nor received by Applicant's representative.

Applicant appreciates the notification that the subject matter of claim 11 is allowable.

In terms of the 35 USC § 112, first paragraph, rejection of claim 7, Applicant appreciates the Office discovering the clerical error. As such, claim 7 is amended to remove the words "and the mask value." Support for this amendment and for claim 7 is provided at least by FIG. 3C and its discussion on page 8, lines 6-25, of the application as originally filed. As such, Applicant respectfully requests the § 112 rejection be withdrawn.

Applicant appreciates the lengthy Office action, but Applicant respectfully traverses all of the §§ 102 and 103 rejections as the Office fails to meet its burden of presenting a *prima facie*

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case of anticipation nor obviousness. This task is problematic for the Office as the prior art of record neither teaches nor suggests all of the elements/limitations of the pending claims for at least the reasons presented herein. Applicant invites the Office to contact Applicant's representative to discuss art prior to the future production, if any, of such a lengthy Office action, in order to further prosecution of this matter and to avoid expending unnecessary substantial time and resources.

Note, if the Office complies with MPEP § 706 and specifically 37 CFR 1.104(c)(2), then the Office determined that the Bechtolsheim et al., Baumann, and Anthony J. McAuley and Paul Francis references are the best references available. As the best available references neither teach nor suggest all the claim elements and limitations as required by the MPEP, then all pending claims are believed to be allowable, and Applicant requests the claims be allowed and the application pass to issuance.

Applicant further requests that the Office comply with MPEP § 2111, which requires the interpretation of the claims to be consistent with the specification, which uses the term "data protection" consistently and even provides an example of such on page 7 of the original filed application: "e.g., parity, some error correcting code, or other known or subsequently known data protection scheme." Anyone skilled in the art would clearly recognize that present application is directed to the problem of "content-addressable memories [which] are made of storage elements that are subject to data errors. A corrupted bit or bits in an entry in a content-addressable memory ("CAM") can lead to an incorrect CAM result, and thus an error in routing, forwarding, quality of service or other characterization or application. Needed are mechanisms for verifying the integrity of a CAM result." Original filed application, page 2, lines 11-15. The Summary, Detailed Description and Figures of the original filed application, describe, *inter alia*, methods, computer-readable media, means, apparatus, etc. for verifying the integrity of a result produced by a CAM or other device. (See, for example, the first sentence of the Summary of the Invention).

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The Office's statement that data protection includes access control is inconsistent with Applicant's original disclosure, and violates MPEP § 2111, which requires that claims be given their broadest *reasonable interpretation consistent with the specification*. (*Emphasis added*.) Data protection refers to the verification of a result (e.g., using parity, some error correcting code, or other known or subsequently known data protection scheme). Access control does just that - control access of a packet. Of course, it is possible that an application of the present application is to verify the integrity of a result produced by a CAM or other device, with this result used for access control, but the access control itself is not "data protection" as consistent used by the originally filed application as by one skilled in the art.

Moreover, for anticipation under 35 USC § 102, the reference *must teach each and every aspect of the claimed invention* either explicitly or impliedly, and the burden is on the Office to present a *prima facie* case of anticipation. MPEP § 706.02. Inherent means it *must* occur (e.g., like the occurrence). The fact that a certain result or characteristic *may* occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. MPEP § 2112 (*emphasis in original*).

For obviousness under 35 USC § 103(a) requires "the prior art reference (or references when combined) must teach or suggest *all the claim limitations*. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." MPEP § 706.02(j) (*citing In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991))(*emphasis added*). And, the burden is on the Office Action to establish a *prima facie* case of obviousness.

In order to meet these burdens, the Office must at least present *a rejection for each and every claim limitation*, with these limitations being construed in light of the specification; all of *the presented rejections for a claim must be used in a consistent and as a whole cohere*; and the application of the reference(s) must teach the claim limitation to which it is/they are applied.

Claims 1-58 are pending, with claims 1-5, 10, 12-18, 20-23, 25, 26, 28-31, 33, 34, 36-43, 45, 46, 48-52, 54, 55, 57, and 58 standing as rejected under 35 USC § 102(e) as being

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anticipated by Bechtolsheim et al., US Patent 6,377,577; and claims 6, 19, 44, 47, and 49 standing as rejected under 35 USC § 103(a) as being obvious over Bechtolsheim et al., US Patent 6,377,577, in view of Baumann, US Patent 6,732,227 ; claims 8 and 9 standing as rejected under 35 USC § 103(a) as being obvious over Bechtolsheim et al., US Patent 6,377,577; and claims 24, 27, 32, 35, 53, and 56 standing rejected under as being obvious over Bechtolsheim et al., US Patent 6,377,577, in view of Anthony J. McAuley and Paul Francis, "Fast Routing Table Lookup Using CAMs." Claim 11 stands objected to as being dependent upon a rejected base claim as stated on page 22 of the Office action, and therefore Applicant believes that the Office made a typographical error on page 14, second line from the bottom, wherein it includes claim 11 and fails to include 47. Applicant further requests that the Office either specifically allow or provide a § 102 or § 103 prior rejection of claim 7 as required by the MPEP. Either the Office failed to comply with the MPEP and to provide a prior art rejection or the Office considers claim 7 to contain allowable subject matter. Applicant submits that it is the latter, and even more so, claim 7 is allowable for at least the reasons presented herein.

Applicant will first dispense with each of the § 103(a) rejections by the following statement: Application 09/910,277, (the present application), and Patent US 6,377,577, (a reference cited in each of the § 103 rejections), were at the time the invention of application 09/910,277 was made, owned by, or subject to an obligation of assignment to, the same person. For at least these reasons, claims 6, 8, 9, 19, 24, 27, 32, 35, 44, 47, 49, 53 and 56 are believed to be allowable as the primary § 103 is removed from being prior art.

The following will address the § 102 rejections of claims by each claim set. Once again, Applicant traverses these rejections as the Office fails to present a *prima facie* case of anticipation as it fails to present a rejection for each and every claim element and limitation (and the prior art of record fails to teach all the recited claim elements/limitations).

First, overall, the Office fails to provide rejections for each and every element/limitation, the Office fails to provide rejections for claims which as a whole cohere

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(i.e., using introduced elements and consistently using these introduced elements for each of the recited claim limitations), and the Office fails to interpret all of claim elements in light of the specification.

In regards to independent claim 1, and its dependent claims of 2-11, claim 1 recites "A method comprising: generating an index by a content-addressable memory based on an input value; acquiring a mask value and a data protection field based on the index; generating a comparison value based on the mask value and the input value; and comparing the comparison value to the data protection field."

The Office relies on element 231 for teaching "generating an index by a content-addressable memory based on an input value" however element 231 is compare bits not an index as required by claim 1. Bechtolsheim et al. teaches that element 231 are a set of comparison bits produced by comparing the source port number and the destination port number with known ranges. In fact, the notation of the word "CAM" in element 232 might be a draftsman's error, as the specification refers to element 232 as a finite state machine (col. 6, ll. 4-6). Bechtolsheim et al. is neither teaches, nor is it inherent, that an index (as defined in the specification) is produced by a content-addressable memory based on an input value.

For "acquiring a mask value and a data protection field based on the index," the Office relies on mask 212; however, mask 212 is not retrieved base on any value; rather it is used to mask its corresponding label match pattern 213. Moreover, mask 212 neither teaches nor suggests "a data protection field" and the Office fails to even present a rejection for this element (as Applicant believes that the Office means to equate mask 212 with "a mask value" of claim 1. Note, the claim recites "a mask value AND a data protection field." (EMPHASIS ADDED.)

The Office relies on Bechtolsheim et al., col. 4, lines 38-43, for teaching "generating a comparison value based on the mask value and the input value;" however the comparison value generated by a CAM entry is its match pattern 213 and its mask 212, and match pattern 213 is not "the input value" as recited in the claim limitation.

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The Office relies on Bechtolsheim et al., col. 4, lines 43-45, for teaching "comparing the comparison value to the data protection field;" however, the Office fails to equate the data protection field to any value of Bechtolsheim et al. Moreover, the claim recites that the data protection field acquired based on the index is what is compared to the comparison value.

For at least these reasons, claims 1-11 are believed to be allowable over the prior art of record.

In regards to independent claim 12, and its dependent claims of 13-17, claim 12 recites "A computer readable medium containing computer readable instructions for performing a set of steps, the set of steps comprising: retrieving a mask value and a data protection field from a storage based on an index value generated by a content addressable memory based on an input value; masking the input value with the mask value to generate a masked input value; performing a data protection function on the masked input value to generate a comparison result; and comparing the comparison result with the data protection field." First, the Office's rejection relies on at least some of the same elements and rational for rejecting claim 1, and therefore claim 12 is believed to be allowable for the same reasons presented *supra*. For example, the access control memory does not mask the input value with the mask value retrieved from a storage based on an index value generated by a CAM based on an input value. Even with the Office's improper interpretation of "data protection function" (which Applicant traverses), the Office relies on Bechtolsheim et al., col. 5, lines 1-9 for generating the comparison result, and then relies on lines 5-7 for using that comparison result (generated by the teachings of lines 1-9) to compare against a data protection field. The Office fails to provide rejections for claims which as a whole cohere, and thus, fails to provide a proper rejection. For at least these reasons, claims 12-17 are believed to be allowable.

In regards to independent claim 18, and its dependent claims of 19-22, claim 18 recites "a content addressable memory configured to receive an input word and to generate an index; one or more storage mechanisms coupled to the content addressable memory to receive the index and to produce a mask value and a data protection field; a masking device coupled to

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said one or more storage mechanisms to generate a masked result based on the input word and the mask value; a data protection generator coupled to the masking device to generate a comparison value based on the masked result; and a comparison mechanism coupled to the data protection generator and said one or more storage mechanisms to compare the comparison value and the data protection field." First, the Office's rejection relies on at least some of the same elements and rational for rejecting previously discussed claim rejections, and therefore claim 18 is believed to be allowable for the same reasons presented *supra*. For example, element 232 does not teach generating an index which is used to produce the mask value and the data protection field; and Bechtolsheim et al., col. 4, lines 38-40 neither teaches nor suggests masking the input word (it is masking match pattern 213 and their corresponding masks 212). For at least these reasons, claims 18-22 are believed to be allowable.

In regards to independent claim 23, and its dependent claims of 24-25, claim 23 recites "An apparatus comprising: a content addressable memory including a plurality of entries, each of the plurality of entries including a value and a data protection field; a data protection generator, coupled to the content addressable memory, to receive said value of an identified one of the plurality of entries and to generate a comparison value; and a comparison mechanism, coupled to the data protection generator and the content addressable memory, to compare the comparison value and said data protection field of the identified one of the plurality of entries." First, the Office's rejection relies on at least some of the same elements and rational for rejecting previously discussed claim rejections, and therefore claim 23 is believed to be allowable for the same reasons presented *supra*. Next, claim 23 recites that each of the plurality of CAM entries includes a data protection field, which Bechtolsheim et al. neither teaches nor suggests and the Office fails to even present a rejection for the element of "data protection field." Next, claim 23 requires the value to be received, wherein the CAM as taught by Bechtolsheim et al. neither teaches nor suggests that the value (or the "mask" as applied by the Office) is configured to receive the recited value as it is not even produced by

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the CAM of Bechtolsheim et al. The traversal of the last two elements has already been addressed herein. For at least these reasons, claims 23-25 are believed to be allowable.

Claims 26-30 are believed to be allowable for at least the reasons presented in relation to claims 23-25, as they recite similar element/limitations and the same traversals of the rejection applies, and therefore these traversals do not need to be repeated. Bechtolsheim et al. neither teaches nor suggests and the Office fails to even present a rejection for the element of "data protection field," let alone provide a rejection which uses equated elements of Bechtolsheim et al. to the recited claim elements consistently for each and every recited claim limitation.

In regards to independent claim 31, and its dependent claim 32, claim 31 recites " An apparatus comprising: a content addressable memory to receive an input and to generate an index; a memory, coupled to the content addressable memory and a comparison mechanism, to receive the index and to generate a data protection field; a data protection generator, coupled to the content addressable memory and the comparison mechanism, to receive the index and to generate a comparison value; and the comparison mechanism to compare the comparison value and the data protection field. " First, the Office's rejection relies on at least some of the same elements and rational for rejecting previously discussed claim rejections, and therefore claim 31 is believed to be allowable for the same reasons presented *supra*, as, for example, Bechtolsheim et al. neither teaches nor suggests and the Office fails to even present a rejection for the element of "data protection field." For at least these reasons, claims 31 and 32 are believed to be allowable.

In regards to independent claim 33, and its dependent claims 34-38, claim 33 recites "A method comprising: generating an index by a content addressable memory based on an input value; generating a comparison value based on the index; acquiring a data protection field based on the index; and comparing the comparison value to the data protection field." First, the Office's rejection relies on at least some of the same elements and rational for rejecting previously discussed claim rejections, and therefore claim 33 is believed to be

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allowable for the same reasons presented *supra*. The CAM of access control memory 210 of Bechtolsheim et al. does not work that way; rather for each valid CAM entry: its mask 212 is used to mask its label match pattern 213, and then each of these masked CAM entry values are compared in parallel to the lookup word to identify any matching CAM entries, and then priority encoder 220 identifies the highest priority matching entry. Thus, Bechtolsheim et al. neither teaches nor suggests generating a comparison value based on the index, nor acquiring a data protection field based on the index (it doesn't do these based on the index as stated in the Office action). The traversal of the last two elements has already been addressed herein. For at least these reasons, claims 33-38 are believed to be allowable.

In regards to independent claim 39, and its dependent claims 40-45, claim 39 is a means plus function claim corresponding to independent claim 1, and is believed to be allowable for at least the reasons presented herein for allowance of independent claim 1. For at least these reasons, claims 39-45 are believed to be allowable.

In regards to independent claim 46, and its dependent claims 47-51, claim 46 is a means plus function claim corresponding to independent claim 18, and is believed to be allowable for at least the reasons presented herein for allowance of independent claim 18. For at least these reasons, claims 46-51 are believed to be allowable.

In regards to independent claim 52, and its dependent claims 53-54, claim 52 recites "An apparatus comprising: means for receiving an index and for producing a value and a data protection field based on the index; means for generating a comparison value based on the value; and means for comparing the comparison value to the data protection field." Note, claim 52 has been amended to add continuity receiving the index and for producing a value and a data protection field to add the limitation "based on the index." Support is provided in many places in the originally filed application, such as, but not limited to page 7, lines 7-8 of the originally filed specification. Next, the Office's rejection relies on at least some of the same elements and rational for rejecting previously discussed claim rejections, and therefore claim 52 is believed to be allowable for the same reasons presented *supra*. For example,

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Bechtolsheim et al. neither teaches nor suggests means for receiving an index and for producing a value and a data protection field based on the index; let alone the other claim elements as consistently interpreted. For at least these reasons, claims 52-54 are believed to be allowable.

In regards to independent claim 55, and its dependent claims 56-58, claim 55 is a means plus function claim corresponding to independent claim 33, and is believed to be allowable for at least the reasons presented herein for allowance of independent claim 33. For at least these reasons, claims 55-58 are believed to be allowable.

In view of the above remarks and for at least the reasons presented herein, all pending claims are believed to be allowable over the prior art of record, the application is considered in good and proper form for allowance, and the Office is respectfully requested to issue a timely Notice of allowance in this case. If, in the opinion of the Office, a telephone conference would expedite the prosecution of the subject application, the Office is invited to call the undersigned attorney.

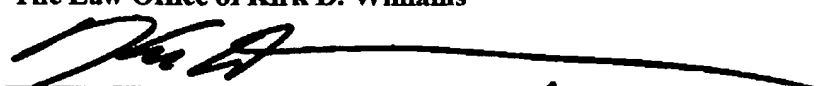
Applicant believes that no extension of time is required; although, the Commissioner is hereby generally authorized under 37 C.F.R. § 1.136(a)(3) to treat this communication or any future communication in this or any related application filed pursuant to 37 C.F.R. § 1.53 requiring an extension of time as incorporating a request therefore, and the Commissioner is hereby specifically authorized to charge Deposit Account No. 501430 for any fee that may be due in connection with such a request for an extension of time. Moreover, the Commissioner is hereby authorized to charge payment of any fee due any under 37 C.F.R. §§ 1.16 and § 1.17 associated with this communication or any future communication in this or any related application filed pursuant to 37 C.F.R. § 1.53 or credit any overpayment to Deposit Account No. 501430.

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Respectfully submitted,
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